The Environmental Indicators

Introduction

This chapter presents the initial set of environmental indicators developed during the first year of the EPIC Project. Identification and selection of the indicators followed the process and criteria described in the previous chapter. Indicators are organized under separate sections for the following issue categories:

> **Air quality**
>
> **Water**
>
> **Land, Waste and Materials Management**
>
> **Pesticides**
>
> **Transboundary Issues**
>
> **Environmental Exposure Impacts upon Human Health**
>
> **Ecosystem Health**

Although each section focuses on a specific issue category, the issues do not exist in isolation. Issues or indicators described in one section may impact, or be impacted by, other issue areas. For example, emissions of methyl mercury, formed as a result of bacterial action on mercury-containing wastes, have recently been measured in landfill gas. Methyl mercury emissions can result in deposition of the chemical into surface waters and their sediments, where the chemical can be assimilated by aquatic organisms, including fish, leading to ecosystem or human health consequences. The linkages among the various issue areas will be explored in subsequent editions of this report.

An additional set of "background indicators" is also discussed. These indicators reflect trends in certain demographic, economic, human health and other parameters that can provide a meaningful context with which to interpret some of the environmental indicators.
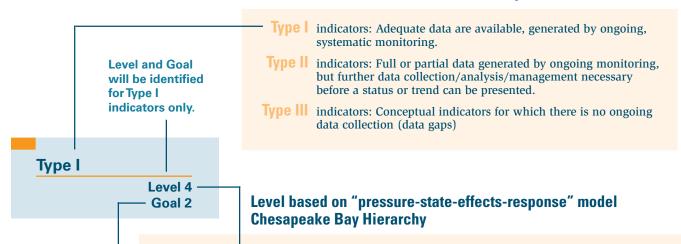
Chapter Organization

This chapter consists of eight sections: the seven environmental issue categories listed above, and the background indicators. Except for the background indicator section, each section includes, in the following sequence:

- An introduction to the issue category; this includes a summary list of the environmental indica- tors presented (with the issue or sub-issue they represent), and a description of the issues identified for the topic area;

- Individual indicator sheets for indicators classified as "Type I" indicators (i.e., indicators with adequate data supported by ongoing, systematic monitoring or data collection);

- Presentation of the "Type II" indicators (i.e., indicators for which data are generated by ongoing monitoring and/or collection, but either a full cycle of data has not been collected, or further data analysis or manage- ment is needed); and,

- Presentation of the "Type III" indicators (i.e., indicators that could be developed if ongoing, systematic data collection efforts are initiated).

Key to indicator information box

Classification based on data availability: (abbreviated form)

Type I indicators: Adequate data are available, generated by ongoing, systematic monitoring.

Type II indicators: Full or partial data generated by ongoing monitoring, but further data collection/analysis/management necessary before a status or trend can be presented.

Type III indicators: Conceptual indicators for which there is no ongoing data collection (data gaps)

Level and Goal will be identified for Type I indicators only.

Type I

Level 4
Goal 2

Level based on "pressure-state-effects-response" model Chesapeake Bay Hierarchy

Administrative		Environmental			
Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Level 5**
Actions by EPA/State Regulatory Agencies	Responses of the Regulated & Nonregulated Communities	Changes in Discharge or Emission Quantities	Changes in Ambient Conditions	Changes in Uptake and/or Assimilation	Changes in Health, Ecology or Other Effects
Response		**Pressure**	**State**		**Effects**

Cal/EPA Strategic Vision Goals* (abbreviated form)

1　Air that is safe for people and the environment

2　Lakes, rivers and streams that are swimmable and fishable

3　Groundwater that is safe for drinking

4　Minimal risk from hazardous substances

5　Reduce/eliminate differential exposure to contaminants in the population

6　Improve efficiency of natural resource use

7　Improve application of science to environmental protection

8　Improve efficiency of operations

For the full text of these goals visit:

www.calepa.ca.gov/Publications/Reparts/StratPlans/2002/